ABSTRACT

TAKE-UP REEL WITH UNI-DIRECTIONAL SPEED GOVERNORED RETRACTOR

A take-up reel for winding and storing an elongate hose or electrical cable comprises a reel supported by a stationary support shaft and urged in a first direction by a torsional spring. A viscous clutch assembly comprising multiple disks housed in a chamber filled with a viscous fluid is coupled to the reel to provide a retarding force that is proportional to velocity. The velocity proportional retarding force causes the rewind velocity of the reel to stabilize at a constant velocity. A unidirectional clutch is provided to decouple the viscous clutch from the reel when the hose or cable is being payed-out thereby permitting the hose or cable to be payed-out without resistance from the viscous clutch. By providing a uni-directional viscous clutch that acts to retard only the take-up velocity of the hose reel, it is possible to provide an apparatus that permits the hose to be payed-out at any speed while providing the substantial safety benefits of a viscous speed governor during take-up.